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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,832	12/27/2000	Ligang Lu	YOR920000783US1	6286

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EXAMINER

VO, TUNG T

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 03/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,832

Applicant(s)

LU ET AL.

Examiner

Tung T. Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) filed on 04/09/01 has been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Youn et al. (US 6,466,623).

Re claim 1, Youn discloses the same system for transcoding compressed video signal, including a plurality of pictures (fig. 8) comprising:

an estimator to gather information and estimate the signal characteristics about the video signal (706 and 708 of fig. 8; e.g. MOTION ESTIMATOR outputs the motion vector (708) to a decoder (814 of fig. 8) and an encoder (816 of fig. 8); see col. 7, line 61 through col. 8, line 31);

a decoder to completely or partially decode the compressed video signal (814 of fig. 8; e.g. the decoder (814) decodes the encode video signal (712 of fig. 8); see also col. 7, lines 42-47);

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an encoder to compress the reconstructed video signal according to a coding scheme devised on the estimated signal characteristics from the estimator (816 of fig. 8; e.g. the encoder (816) re-encodes the intermediate digital video signal with a bit and frame rate suitable for the network (522 of fig. 8) using the incoming motion vector signal (708 of fig. 8); see also col. 7, lines 48-50 and col. 8, lines 26-30).

Re claim 2; Youn further discloses wherein said estimator is a look-ahead estimator (1202, 1204 and 1206 of fig. 12; the elements (1202, 1204 and 1206) implemented to estimate a motion vector (928 of fig. 12), which is considered as a look a head estimator), where the look-ahead estimator gathers information from the incoming compressed video signal and the decoder to estimate the signal characteristics of both the future incoming pictures and current picture (914, 920, and 636 of fig. 12; e.g. the look-ahead motion estimator gathers the input motion vector as the information of the incoming compressed signal (625) and the information of the decoder (920) to estimate the signal characteristics of both the future incoming pictures (Frame n , Frame $n+1$) and current picture (Frame $n-1$) (IV_n , IV_{n+1} of fig. 10); see also col. 8, lines 45-47; col. 10, lines 54).

Re claim 3, Youn further discloses wherein said estimator derives the signal complexity of the current picture being transcoded (col. 2, lines 23-25; col. 11, lines 23-24; e.g. the complexity of computation of quantization step size used in the current picture is similar to checking one position in motion estimation).

Re claim 4, Youn further disclose said estimator estimates the complexity of each portion of the picture (130 131, 135 of figs. 1A, 1B).

Re claim 5, Youn further discloses said portion is a slice of the picture (e.g. MPEG, H.261, and H.263; wherein the MPEG contains a slice of the picture, see col. 4, line 63 through col. 5, line 20).

Re claim 6, Youn further discloses wherein said portion is a macroblock of the picture (130 of fig. 1A).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youn et al. (US 6,466,623) as applied to claim 1 and 3, and further in view of Kwok et al. (US 5,889,561).

Re claims 7 and 8, Youn suggests the transcoding system (figs. 8, 9 and 19) for transcoding the encoded or compressed video signal using the picture type, motion vectors quantization step size, bit-allocation statistics, etc (col. 2, lines 20-23), but Youn does not

particularly disclose said complexity is estimated by a function of the total bits and the average quantization step size used to code the picture in the first coding scheme as claimed.

However, Kwok teaches the complexity is estimated by a function of the total bits and the average quantization step size used to encode the picture in the first coding scheme (42 and 47 of fig. 4; e.g. the total bits and quantization factor (step size) are estimated by the function of SF that used in the encoder (43 of fig. 4); see also col. 6, lines 8-25).

Therefore, taking the combined teachings of Youn and Kwok as a whole, it would have been obvious to one of ordinary skill in the art to incorporate the function (col. 6, lines 8-25) of Kwok into the transcoding system of Youn for the same purpose of performing the function of the total bits and the average quantization step size used to encode the picture in the encoder as suggested by Kwok (col. 5, lines 25-34). Doing so would allow the transcoding system to reduce the amount of data in a previously compressed video signal bit stream and provide the higher quality of information in the original signal should be exploited as much as possible and the resulting image quality of the new signal with a lower bit rate should be as high as possible as suggested by Kwok (col. 1, lines 4-6; col. 2, lines 1-6).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Youn et al. (US 2002/0154698 A1) discloses a method and apparatus for motion estimation for high performance transcoding.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung T. Vo whose telephone number is (703) 308-5874. The examiner can normally be reached on 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris. Kelley can be reached on (703) 305-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



TUNG T. VO
PATENT EXAMINER

T. Vo
March 6, 2003

Tung T. Vo
Examiner
Art Unit 2613